



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,514	08/14/2006	Kiyoshi Nishiyama	8840/96472 (P0737US)	8971
24628	7590	05/30/2008	EXAMINER	
WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			ALHJJA, SAIF A	
			ART UNIT	PAPER NUMBER
			2128	
			MAIL DATE	DELIVERY MODE
			05/30/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/567,514	NISHIYAMA, KIYOSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	SAIF A. ALHIJA	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2,3,7-11 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,7-11 and 13-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/17/06, 8/21/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. Claims 2-3, 7-11, 13-23 have been presented for examination.

**PRIORITY**

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

**Information Disclosure Statement**

3. The information disclosure statements (IDS) submitted on 21 August 2006 and 17 February 2006 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the Examiner has considered the IDS' as to the merits.

**Claim Rejections – 35 USC § 101**

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**MPEP 2106 recites:**

The claimed invention as a whole must accomplish a practical application. That is, it must produce a “useful, concrete and tangible result” State Street 149 F.3d at 1373, 47 USPQ2d at 1601-02. A process that consists solely of the manipulation of an abstract idea is not concrete or tangibles. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed.Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459.

4. **Claims 2-3, 7-11, 13-23 are rejected** under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

i) The Courts have found that subject matter that is not a practical application or use of an idea, a law of nature or a natural phenomenon is not patentable. As the Supreme Court has made clear, " [a]n idea of itself is not patentable," Rubber-Tip Pencil Co. v. Howard, 20 U.S. (i Wall.) 498, 507 (1874); taking several abstract ideas and manipulating them together adds nothing to the basic equation. In re Warmerdam, 31 USPQ2d 1754 (Fed. Cir. 1994).

The language of the claims indicate that the claims are directed merely to an abstract idea that is not tied to a technologic art, environment, or machine that would conclude with a tangible result to form the basis of statutory

Art Unit: 2128

subject matter under 35 USC 101. The claimed limitations appear to be no more than manipulation of mathematical equations without any application or tangible output, therefore the claims are rejected under 35 USC 101.

ii) The claims recite a “storage section” and an “input section” however it is unclear if these represent actual physical storage and input devices or merely abstract ideas. The specification does not further elaborate on these terms.

iii) Claims 15 and 16 recites a program. It should be noted that code (i.e., a computer software program) does not do anything per se. Instead, it is the code stored on a computer that, *when executed*, instructs the computer to perform various functions. The following claim is a generic example of a proper computer program product claim;

A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to perform the following:

Function A  
Function B  
Function C, etc...

Appropriate correction is required.

All claims dependent upon a rejected base claim are rejected by virtue of their dependency.

**Claim Rejections - 35 USC § 112**

**The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**5. Claim 2-3, 7-11, 13-23 are rejected** under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

i) The claims do not explicitly define each and every variable recited. For example with respect to claim 7, variable Rk. The Examiner appreciates Applicants explicitly defining a majority of the variables used in the claimed equations and requests that they ensure that all variables used are explicitly defined.

ii) Claim 7 recites “which are deleted J1(-1) and J1.” The Examiner is puzzled by this statement since these variables appear in equations 21 and 22.

Art Unit: 2128

iii) Claim 7 recites “sets the upper limit value to be small within a range.” The scope and metes and bounds of the term small cannot be ascertained. What constitutes small? This renders the claims vague and indefinite. This further applies to claims 9, 11, and 17.

iv) Claim 14 recites “an echo canceller is realized by canceling an actual echo by the obtained pseudo-echo.” The scope and metes and bounds of this limitation cannot be ascertained. This renders the claims vague and indefinite. This further applies to claims 20 and 23.

v) Claim 15 recites “the forgetting factor relevant to the state space model.” It is unclear what is meant by a factor relevant to the model since it appears the variable requires an explicit definition. The scope and metes and bounds of this limitation cannot be ascertained. This renders the claims vague and indefinite. This further applies to claim 16.

Appropriate correction is required.

All claims dependent upon a rejected base claim are rejected by virtue of their dependency.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**6. Claims 2-3, 7-11, 13, 15-19, and 21-22 are rejected** under 35 U.S.C. 102(b) as being clearly anticipated by Nishiyama et al. “H(infinity) learning of Layered Neural Networks”, hereafter N1.

Art Unit: 2128

7. **Claims 2-3, 7-11, 13, 15-19, and 21-22 are rejected** under 35 U.S.C. 102(b) as being clearly anticipated by Nishiyama “Robust Estimation of a Single Complex Sinusoid in White Noise-H Filter Approach”, hereafter N2.

8. **Claims 2-3, 7-11, 13, 15-19, and 21-22 are rejected** under 35 U.S.C. 102(b) as being clearly anticipated by Nishiyama “A Nonlinear Filter for Estimating a Sinusoidal Signal and Its Parameters in White Noise: On the Case of a Single Sinusoid”, hereafter N3.

**Regarding Claim 7:**

**N1 discloses equations 20-23 of the claim in Figures 4-5 and equations 13-20.**

**N2 discloses equations 20-23 of the claim in equations 8-11 and 18-22.**

**N3 discloses equations 20-23 of the claim in equations 9-12.**

**Regarding Claim 9:**

**N1 discloses equations 60-63 of the claim in Figures 4-5 and equations 13-20.**

**N2 discloses equations 60-63 of the claim in equations 8-11 and 18-22.**

**N3 discloses equations 60-63 of the claim in equations 9-12.**

**Regarding Claims 11, 15, 16, and 17:**

**N1 discloses equations 25-30 of the claim in Figures 4-5 and equations 13-20.**

**N2 discloses equations 25-30 of the claim in equations 8-11 and 18-22.**

**N3 discloses equations 25-30 of the claim in equations 9-12.**

**Regarding Claims 2, 3, 18 and 21:**

**N1 discloses the existence condition in equation 16.**

**N2 discloses the existence condition in equation 12.**

**N3 discloses the existence condition in Section V-C.**

Art Unit: 2128

**Regarding Claims 13, 19, and 22:**

**N1 discloses this above equation 1.**

**N2 discloses this in Section III-B.**

**N3 discloses this above equation 48.**

**Regarding Claims 8 and 10:**

**N1 discloses this below equation 18.**

**N2 discloses this below equation 5.**

**N3 discloses this below equation 35.**

**Allowable Subject Matter**

**9. Claims 14, 20, and 23 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Examiners Remarks**

**10. i)** Examiner has cited particular columns and line numbers in the references applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

**ii)** The Examiner respectfully requests, in the event the Applicants choose to amend or add new claims, that such claims and their limitations be directly mapped to the specification, which provides support for the subject matter. This will assist in expediting compact prosecution.

**iii)** Further, the Examiner respectfully encourages Applicants to direct the specificity of their response with regards to this office action to the broadest reasonable interpretation of the claims as presented. This will avoid issues that would delay prosecution such as limitations not explicitly presented in the claims, intended use

Art Unit: 2128

statements that carry no patentable weight, mere allegations of patentability, and novelty that is not clearly expressed.

iv) The Examiner also respectfully requests Applicants, in the event they choose to amend, to supply a clean version of the presented claims in addition to the marked-up copy in order to avoid potential inaccuracies with the version of the claims that would be examined.

**Conclusion**

11. All Claims are rejected.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saif A. Alhija whose telephone number is (571) 272-8635. The examiner can normally be reached on M-F, 11:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. *Informal or draft communication, please label PROPOSED or DRAFT*, can be additionally sent to the Examiners fax phone number, (571) 273-8635.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kamini S Shah/

Supervisory Patent Examiner, Art Unit 2128

SAA



